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Search Results - Record(s) 1 through 20 of 20 returned.

☐ 1. Document ID: US 20020135786 A1

Using default format because multiple data bases are involved.

L2: Entry 1 of 20

File: PGPB

Sep 26, 2002

PGPUB-DOCUMENT-NUMBER: 20020135786

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020135786 A1

TITLE: Printing control interface system and method with handwriting discrimination capability

PUBLICATION-DATE: September 26, 2002

INVENTOR-INFORMATION:

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US-CL-CURRENT: 358/1.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	K00C	Draw D
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☐ 2. Document ID: US 20020102022 A1

L2: Entry 2 of 20

File: PGPB

Aug 1, 2002

DOCUMENT-IDENTIFIER: US 20020102022 A1

TITLE: Detecting and utilizing add-on information from a scanned document image

Summary of Invention Paragraph:

[0005] Moreover, there are also times when the person editing or annotating a printed document may make handwritten changes or additions to the document and then later need to have a copy of the document in its original, unedited and annotated form. Unless an extra copy of the document was previously saved, in its original form. Anyone who has ever tried to reconstitute a heavily edited document may manually erasing or covering up the edits and annotations understands how tedious and time consuming the process is. Automated methods of separating handwritten annotations from printed text, if developed, could potentially relieve much of the tedium.

Detail Description Paragraph:

[0054] Starting at step 402, the secondary version of the document having the printed text lines and the handwritten annotations is scanned. The handwritten annotations are separated from the printed text lines according to the aforementioned method for detecting and separating the add-on information 10 (FIG. 1), step 404. The separated printed text lines are then compared to all the original documents in the database at step 406 in order to find the identical document, step 408. If there does not exist an original document for the printed text lines, the extracted printed text line is stored as original document, step 410, and handwritten annotations is stored in a different memory location, step 412. The memory location of the stored handwritten annotation is linked to the memory location of the original document, step 414. The process is terminated. In case of extracted printed text lines having an original document in the database, only handwritten annotations are stored, step 416, and therefore linked to the identified original document, step 418. The process is terminated. In this case, the extracted printed text lines are ignored, and memory space is saved.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 3. Document ID: US 20020079371 A1

L2: Entry 3 of 20

File: PGPB

Jun 27, 2002

DOCUMENT-IDENTIFIER: US 20020079371 A1

TITLE: Multi-moded scanning pen with feedback

Detail Description Paragraph:

[0163] If desired, the message and its pointers may be stored as part of the database 310 (FIG. 3); however, if full recognition has not been performed, it is likely that the system will not be able to index the information in any meaningful way without user intervention. Either the message as a whole, with pointers to interesting data, can be stored in the database, or only the name and number (for example, after the user has verified their correct extraction) can be selected for merger into the database. Accordingly, once extraction has taken place, the extracted number can be dealt with in at least three different ways: it may be saved as a full audio stream (much as pen computers save unrecognized handwriting) and remain a transient form annotating the particular message; it may be saved to the database (with all or part of the greeting to identify the caller); or it can be recognized as numbers, and merged into the appropriate organizing construct (such as a calendar or electronic address book). This technique can also be used as an accelerator--a key on the phone keypad may be used to skip directly to the embedded phone number in a long message. In this scheme, not only does the audio stream remain unchanged; it also remains in the same medium for access.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 4. Document ID: US 20020056577 A1

L2: Entry 4 of 20

File: PGPB

May 16, 2002

DOCUMENT-IDENTIFIER: US 20020056577 A1
TITLE: Collaborative input system

Detail Description Paragraph:

[0024] A single, predefined coordinate system is used in the system 10 that resides on the host computer 12. All digitizers 18 are mapped in the same graphic display space that coincides with the display 14. For example, as shown in FIG. 1, information 25 input on digitizer 18' coincides with the display 14 so as to be shown in the corresponding location on the display 14 and on the projected image on the whiteboard 21. Handwritten information 25 does not appear on the digitizer 18, the stroke is however captured electronically and is represented graphically on the display 14 and whiteboard 21 (if provided) together with the image 17. The screen capture and annotation is done by a software application such as the Interwrite.TM. software of GTCO CalComp. The software runs on the host computer 12 which has the drivers included for hardware to map the digitizer display space to the display 14. The software has two basic elements: 1) the application that allows the images to be captured, annotated and saved and 2) the interface to the hardware, that interprets the information coming in from the digitizers 18.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	R/MC	Draw. De
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☐ 5. Document ID: US 20020051262 A1

L2: Entry 5 of 20

File: PGPB

May 2, 2002

DOCUMENT-IDENTIFIER: US 20020051262 A1
TITLE: Image capture device with handwritten annotation

Detail Description Paragraph:

[0044] Continuing with the example, the user is preferably prompted to enter instructions in location 303 set aside for such entries. Four instructions 403 are shown having been entered by the user, which are, from top to bottom, "save file to accident-img," "Attach to mail message," "mail to Dave, Larry, and Pete," and "place directed annotation at bottom center of image." Upon reviewing the user-entered instruction information the inventive scanner preferably performs handwriting analysis on the handwritten entries to convert the individual characters into machine-generated characters. Thereafter, the inventive scanner preferably interprets the sequences of characters to correlate the user-entered sequence of characters with distinct commands recognizable to the scanner. The scanner then preferably executes the instructions in the order entered, unless an alternate order is indicated by the user.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	R/MC	Draw. De
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☐ 6. Document ID: US 6675356 B1

L2: Entry 6 of 20

File: USPT

Jan 6, 2004

DOCUMENT-IDENTIFIER: US 6675356 B1

TITLE: Distributed document-based calendaring system

Detailed Description Text (61):

If desired, the message and its pointers may be stored as part of the database 310 (FIG. 3); however, if full recognition has not been performed, it is likely that the system will not be able to index the information in any meaningful way without user intervention. Either the message as a whole, with pointers to interesting data, can be stored in the database, or only the name and number (for example, after the user has verified their correct extraction) can be selected for merger into the database. Accordingly, once extraction has taken place, the extracted number can be dealt with in at least three different ways: it may be saved as a full audio stream (much as pen computers save unrecognized handwriting) and remain a transient form annotating the particular message; it may be saved to the database (with all or part of the greeting to identify the caller); or it can be recognized as numbers, and merged into the appropriate organizing construct (such as a calendar or electronic address book). This technique can also be used as an accelerator--a key on the phone keypad may be used to skip directly to the embedded phone number in a long message. In this scheme, not only does the audio stream remain unchanged; it also remains in the same medium for access.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawn De
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☐ 7. Document ID: US 6651218 B1

L2: Entry 7 of 20

File: USPT

Nov 18, 2003

DOCUMENT-IDENTIFIER: US 6651218 B1

TITLE: Dynamic content database for multiple document genres

Detailed Description Text (63):

If desired, the message and its pointers may be stored as part of the database 310 (FIG. 3); however, if full recognition has not been performed, it is likely that the system will not be able to index the information in any meaningful way without user intervention. Either the message as a whole, with pointers to interesting data, can be stored in the database, or only the name and number (for example, after the user has verified their correct extraction) can be selected for merger into the database. Accordingly, once extraction has taken place, the extracted number can be dealt with in at least three different ways: it may be saved as a full audio stream (much as pen computers save unrecognized handwriting) and remain a transient form annotating the particular message; it may be saved to the database (with all or part of the greeting to identify the caller); or it can be recognized as numbers, and merged into the appropriate organizing construct (such as a calendar or electronic address book). This technique can also be used as an accelerator--a key on the phone keypad may be used to skip directly to the embedded phone number in a long message. In this scheme, not only does the audio stream remain unchanged; it also remains in the same medium for access.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawn De
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☐ 8. Document ID: US 6342901 B1

L2: Entry 8 of 20

File: USPT

Jan 29, 2002

DOCUMENT-IDENTIFIER: US 6342901 B1

TITLE: Interactive device for displaying information from multiple sources

Detailed Description Text (98):

If desired, the message and its pointers may be stored as part of the database 310 (FIG. 3); however, if full recognition has not been performed, it is likely that the system will not be able to index the information in any meaningful way without user intervention. Either the message as a whole, with pointers to interesting data, can be stored in the database, or only the name and number (for example, after the user has verified their correct extraction) can be selected for merger into the database. Accordingly, once extraction has taken place, the extracted number can be dealt with in at least three different ways: it may be saved as a full audio stream (much as pen computers save unrecognized handwriting) and remain a transient form annotating the particular message; it may be saved to the database (with all or part of the greeting to identify the caller); or it can be recognized as numbers, and merged into the appropriate organizing construct (such as a calendar or electronic address book). This technique can also be used as an accelerator--a key on the phone keypad may be used to skip directly to the embedded phone number in a long message. In this scheme, not only does the audio stream remain unchanged; it also remains in the same medium for access.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawings
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☐ 9. Document ID: US 6249765 B1

L2: Entry 9 of 20

File: USPT

Jun 19, 2001

DOCUMENT-IDENTIFIER: US 6249765 B1

TITLE: System and method for extracting data from audio messages

Detailed Description Text (99):

If desired, the message and its pointers may be stored as part of the database 310 (FIG. 3); however, if full recognition has not been performed, it is likely that the system will not be able to index the information in any meaningful way without user intervention. Either the message as a whole, with pointers to interesting data, can be stored in the database, or only the name and number (for example, after the user has verified their correct extraction) can be selected for merger into the database. Accordingly, once extraction has taken place, the extracted number can be dealt with in at least three different ways: it may be saved as a full audio stream (much as pen computers save unrecognized handwriting) and remain a transient form annotating the particular message; it may be saved to the database (with all or part of the greeting to identify the caller); or it can be recognized as numbers, and merged into the appropriate organizing construct (such as a calendar or electronic address book). This technique can also be used as an accelerator--a key on the phone keypad may be used to skip directly to the embedded phone number in a long message. In this scheme, not only does the audio stream remain unchanged; it also remains in the same medium for access.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 10. Document ID: US 5809498 A

L2: Entry 10 of 20

File: USPT

Sep 15, 1998

DOCUMENT-IDENTIFIER: US 5809498 A

TITLE: Method of locating a penstroke sequence in a computer

Detailed Description Text (15):

Images 34-37 include, with the pictographic names of the files, an icon of a letter, at 32, indicating to the user that the contents of the so-annotated files are letters. Pictographic names 34 and 35 have not only the same icon of a letter, at 32, but also have highly similar images, Josh and Josh2 respectively. The user may opt to input and save a new handwritten representation of the contents of the file each time a related file is created; or, may use part of the originally created image when naming a subsequently created related file. In the latter manner, the original pictographic image is copied and altered, by erasure or by the addition of information, for example. Later retrieval of the related documents can be greatly enhanced irrespective of the specific matching algorithm which is employed, as will be further detailed below.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☒ 11. Document ID: US 5761485 A

L2: Entry 11 of 20

File: USPT

Jun 2, 1998

DOCUMENT-IDENTIFIER: US 5761485 A

TITLE: Personal electronic book system

Detailed Description Text (30):

Embodiments of the Personal Electronic Book incorporating handwritten or handprinted note capability further comprise handwriting recognition software incorporated into the proprietary operating system. User input via one of the touchscreens is analyzed and converted into digital characters that are displayed for confirmation, a keyboard, or the like, can be displayed to enter corrections and then the annotation saved upon user command. Alternatively, Graphical software capabilities are added to the proprietary operating system that interprets the user's handwriting as a graphical image, stores this graphical image, and the displays this image along with the annotated document or in a user-created document.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 12. Document ID: US 5749908 A

L2: Entry 12 of 20

File: USPT

May 12, 1998

DOCUMENT-IDENTIFIER: US 5749908 A

TITLE: Methods and apparatus for annotating data in an implantable device programmer using digitally recorded sound

Detailed Description Text (95):

Another alternative embodiment of the present invention is shown in FIG. 21. In this embodiment, the transcription of voice data is carried out using the digitizer pen 102 (FIG. 1) rather than using a keyboard. The elements displayed on the display screen in this embodiment preferably are the same as those shown in FIGS. 17 and 18, and are thus labeled with the same reference numbers (except for the ink tool icon 450, text window 452, and text 454 as explained below). The like-numbered elements operate in the same manner as those described above in reference to FIGS. 17 and 18 and will not be discussed further here. After selecting the voice annotation 410 for transcription, the medical specialist taps an ink tool icon 450 to allow the pen 102 (FIG. 1) to write in the text window 452. When the medical specialist is finished writing, he or she taps the ink tool icon 450 again. The medical specialist saves handwritten text 454 by tapping the save button 438. In this embodiment, the display screen shown in FIG. 21 is displayed on the display screen of the tablet computer 100 so that the user can write with the digitizer pen 102 (FIG. 1).

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequence	Attachments	Claims	RWMC	Draw. De
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☐ 13. Document ID: US 5734882 A

L2: Entry 13 of 20

File: USPT

Mar 31, 1998

DOCUMENT-IDENTIFIER: US 5734882 A

TITLE: Pictographic bitmap naming of files in pen-based computer systems

Detailed Description Text (15):

Images 34-37 include, with the pictographic names of the files, an icon of a letter, at 32, indicating to the user that the contents of the so-annotated files are letters. Pictographic names 34 and 35 have not only the same icon of a letter, at 32, but also have highly similar images, Josh and Josh2 respectively. The user may opt to input and save a new handwritten representation of the contents of the file each time a related file is created; or, may use part of the originally created image when naming a subsequently created related file. In the latter manner, the original pictographic image is copied and altered, by erasure or by the addition of information, for example. Later retrieval of the related documents can be greatly enhanced irrespective of the specific matching algorithm which is employed, as will be further detailed below.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequence	Attachments	Claims	RWMC	Draw. De
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☐ 14. Document ID: US 5561446 A

L2: Entry 14 of 20

File: USPT

Oct 1, 1996

DOCUMENT-IDENTIFIER: US 5561446 A

TITLE: Method and apparatus for wireless remote information retrieval and pen-based data entry

Detailed Description Text (16):

In addition to the handwritten notes corresponding to spaces on a standardized form, handwritten drawings may be entered on a template such as the one shown in FIG. 5. FIG. 5 shows how the interface 30 can display a diagram 60 of human skeletal muscles, for example, to aid in patient diagnosis. When such a template is displayed on the position sensitive display 12a, the user can enter drawings 62a and/or notes 62b using the stylus 12b thereby annotating the diagram 60. The annotated diagram 60 becomes a part of the patient records by saving the drawings and notes 62a, 62b as electronic ink as described in more detail below with reference to FIG. 7.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 15. Document ID: US RE34476 E

L2: Entry 15 of 20

File: USPT

Dec 14, 1993

DOCUMENT-IDENTIFIER: US RE34476 E

TITLE: Hybrid information management system for handwriting and text

Brief Summary Text (29):

The system is also designed strictly for one-time annotation or creation of an handwritten note. There is no capability for manipulating elements of handwritten material or for subsequent modification. Once the handwritten material is "saved", i.e., committed to file storage status, it cannot be modified, only erased totally. This prevents the system from being used with information in an appointment book or "to-do" list format where the capability for updating an information element is critical. This limitation upon the manipulation of handwritten information elements also effectively prevents the facile organization and combination of multiple handwritten information elements which may be contained as sub-elements of other handwritten information sources into a combined handwritten document. Such a capability is key to assembly of a report, outline or paper drawing on separately stored information sub-elements (ideas, facts and other). Because this kind of information assembly is a very prominent information processing activity, it represents a severe limitation of the system.

Detailed Description Text (93):

Extensive labor saving may also be realized through use of the Secretary module as an independent device. Its employment eliminates the following time consuming manual steps: physical transmittal of handwritten source copy; printing of one or more draft copies for editing/correction; return transmittal of the hand edited draft material; and copying of source and final documents for certain purposes. As compared with internal mail systems, electronic transmittal of handwritten source and annotated material results in a dramatic increase in throughput--a significant quality benefit.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 16. Document ID: US 5063600 A

L2: Entry 16 of 20

File: USPT

Nov 5, 1991

DOCUMENT-IDENTIFIER: US 5063600 A

TITLE: Hybrid information management system for handwriting and text

Brief Summary Text (28):

The system is also designed strictly for one-time annotation or creation of an handwritten note. There is no capability for manipulating elements of handwritten material or for subsequent modification. Once the handwritten material is "saved", i.e., committed to file storage status, it cannot be modified, only erased totally. This prevents the system from being used with information in an appointment book or "to-do" list format where the capability for updating an information element is critical. This limitation upon the manipulation of handwritten information elements also effectively prevents the facile organization and combination of multiple handwritten information elements which may be contained as sub-elements of other handwritten information sources into a combined handwritten document. Such a capability is key to assembly of a report, outline or paper drawing on separately stored information sub-elements (ideas, facts and other). Because this kind of information assembly is a very prominent information processing activity, it represents a severe limitation of the system.

Detailed Description Text (93):

Extensive labor saving may also be realized through use of the Secretary module as an independent device. Its employment eliminates the following time consuming manual steps: physical transmittal of handwritten source copy; printing of one or more draft copies for editing/correction; return transmittal of the hand edited draft material; and copying of source and final documents for certain purposes. As compared with internal mail systems, electronic transmittal of handwritten source and annotated material results in a dramatic increase in throughput--a significant quality benefit.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 17. Document ID: NA8911452

L2: Entry 17 of 20

File: TDBD

Nov 1, 1989

DOCUMENT-IDENTIFIER: NA8911452

TITLE: Linking Handwriting Annotation With Text

Disclosure Text (1):

- Disclosed is a system that provides link and filing features for existing application programs with no functions for handwriting. It does not require application programs to be modified. This system is a terminate and stay resident (TSR) program and deals with all handwriting operations independent of the application program, a link feature preserves the correspondence between a text and its handwritten annotation. A filing feature automatically consolidates the annotated data into a single text file. Handwritten annotation means characters,

symbols, and figures, providing additional information on or beside text (Fig. 1). - In order to preserve the correspondence between a text and its annotation, information on this correspondence has to be kept in the text data, because text is the only available data type for application programs, such as text editors and word processors. This information is pointed to by the "Link Marker". A link marker is a special type of character, but it is neither an alphabetic symbol nor a Kanji character. In order to establish a correspondence, the user specifies a group of strokes as a unit of a link operation and the location of linking. Then, the system puts the character code of the link marker into the text by simulating keyboard operations. Whenever the user moves or copies phrases or sentences that include the link marker to other locations, the corresponding annotations will follow the link marker. - The position of the link marker becomes the basis for displaying handwritten annotations on the text (Fig. 2). The system searches for the link marker within the screen, which is the presentation space of the application. The application program converts the internal text format, which is unknown to this system, into a presentation style, such as a screen. Therefore, it is easy to show and establish the correspondence in the presentation space. - A link marker has information on linked strokes, such as the link identification number, strokes, link type, marker type, and graphics attribute. A link identification number defines the character code of a link marker, which is uniquely assigned in each file. Strokes are a collection of strokes and a unit for linking. The link type means the way the annotation is linked to the text (point link - row and column position of point, region link - row and column position of left-top and right-bottom in a region, page link - page number, line link - page and line number). Some link types, such as region link, require several link markers in order to specify the area. The marker type specifies a figure in the link marker and is shaped like a finger pointer to the center of gravity of the strokes. Graphics attributes, such as color, line type, line width, and zooming factor, are the attributes of strokes. - The filing feature automatically saves handwritten annotation data in a single file without a specific request from the user. All operations on a text file are monitored by the system, so that operations on annotation data can be synchronized with those on text data. Handwritten information is put at the end of the file, and the application program cannot detect its existence.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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☐ 18. Document ID: NN8307508

L2: Entry 18 of 20

File: TDBD

Jul 1, 1983

DOCUMENT-IDENTIFIER: NN8307508

TITLE: Enhanced Handwritten Annotation of Electronic Documents

Disclosure Text (1):

- This article describes security enhancements to the handwritten annotation subsystem described in the preceding article. These enhancements enable a user of the subsystem to specify the identity or the authorization level of the individual or individuals to whom the user's handwritten annotation is directed, and where appropriate, they also may qualify or restrict a user's ability to create or view annotations according to the identity or authorization level of the user. An authorized user also may query the subsystem for information regarding the origin of an annotation and the users who are permitted access to it. - The office system to which these enhancements relate is illustrated above and is basically the same system as that shown in the preceding article. To support these enhancements, the

system software must be capable of distinguishing user IDs (UIDs) and also the authorization levels (ALs) associated with users. Each user has a unique UID and a certain range or ranges of ALs, which together determine the document annotations to which the user can have access and the individuals or classes of individuals to whom he can direct annotations. - In the present enhancement version, the annotation subsystem, comprising the interface and the associated save task and tablet task, has a modified "create an annotation" function and two new query functions, the purpose of which is explained below. Each of these modified and new functions entails a control upon the passage of annotation information in accordance with the UID or AL of the user or the recipient(s) to whom his annotation is directed. In the document structure, as presently constituted; the information for each annotation includes the originator UID, the date and time of origination, and the recipient UID or AL. - The effects of some of the commands described in the preceding article have been modified in the present version, as indicated below: Initialize annotation subsystem: The application provides the UID and the user's authorization range(s), as well as the mapping information and display plane. The interface sets up the tablet and save tasks, and saves the UID for use in annotation creation. It checks the UID and authorization range(s) against the recipient information of all existing annotations as their information is read from the data area. Only those annotations which the user is authorized to see are included in the list which the interface maintains. - Create an annotation: The user must in some manner indicate the specific individual or class of individuals (by UID or AL) to which the annotation is directed. The application supplies this recipient UID or AL to the interface and indicates the display area valid for annotation. The interface places the tablet task in the annotation mode, creates a directory entry, and allocates space for the annotation in the document. It gets the time and date from the system, and saves them and recipient information as part of the annotation information. - The new query functions comprise "query and annotation" and "query all annotations". The "query and annotation" function supplies to the user (if he is authorized to receive it) certain information regarding an existing annotation which is associated with either an identifying symbol in the displayed document or an identifying number in the range from "one" to the total number of annotations. Such information comprises the identity of the originator, the origination date and time, the AL or UID to which the annotation is directed, and the location of the annotation in relation to the text. A query function does not give a user access to the annotation itself. Such access, when permitted by the user's ID or AL, can be had by utilizing one of the view, blank and delete functions described in the preceding article. If the user desires information regarding all annotations which he is authorized to receive, he employs the "query all annotations" function. - The query commands and their corresponding effects are described below: Query an annotation: The user identifies the annotation in which he is interested by selecting its symbol in the displayed document or by specifying the number of that annotation. The application gives the selected location or number against the list of locations or numbers for which the user is authorized to receive annotation information, and if a match is found, the query items are presented to the user. - Query all annotations: The user's request for all annotation information is passed by the application to the interface, which counts the number of annotations in the list of annotations which the user is authorized to receive and returns this number to the application. The application presents to the user a list of the query items for all annotations that exist within the user's authorization range(s). - The commands for viewing, blanking and deleting annotations, which are described in the preceding article, also can be employed in the present system, but since these commands work from the list of annotations maintained by the interface, only those annotations to which the user is authorized to have access can be viewed, blanked or deleted by him.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Security	Attachments	Claims	KWIC	Drawings
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☐ 19. Document ID: NN8307504

L2: Entry 19 of 20

File: TDBD

Jul 1, 1983

DOCUMENT-IDENTIFIER: NN8307504

TITLE: Handwritten Annotation of Electronic Documents

Disclosure Text (1):

- This software subsystem enables handwritten annotations to be superimposed upon or deleted from electronically displayed documents using an electronic tablet as an entry device, so that the user of an electronic office system can annotate electronic documents by hand as readily as this can be done by a user of paper documents in a non- electronic office system. - The concept can best be implemented in a system having a multi- plane frame-buffered display which enables the document text and the annotations to be written on separate bit planes. It can be implemented also in a single-plane display system but with less functional convenience. The system also requires an electronic tablet which can provide information as to stylus or pen location and whether the pen is on or off the tablet while it is being moved. The term "annotation" is broadly used and may include signatures as well as hand-drawn figures and written notes. - Generally, a user does not want to view simultaneously all of the annotations to a document, written in full. In most instances it will suffice to indicate the existence of an annotation by placing a special symbol upon the displayed document at the place where the annotation is to appear, giving the user the capability of retrieving that annotation for full display merely by pointing to the symbol (through the medium of the pen and tablet) whenever he wants to view the annotation and perform operations upon it. The present system is designed on the assumption that the full display of annotations is only occasionally needed and that a symbolic display is usually adequate. - Referring to the block diagram, the handwritten annotation subsystem runs under control of the document review application task, and it comprises three software components: an interface and two high- priority tasks (save and tablet) running in conjunction with the application task. The interface component accepts commands from the application, interprets these commands, performs certain functions in response to them, and communicates with the save and tablet tasks. The tablet task operates in either of two modes as chosen by the interface. In its selection mode the task only services the tablet, receiving information from the tablet and converting it to a form usable by the subsystem and/or the application. In its annotation mode the tablet task still services the tablet in accordance with the selection function, but also buffers the tablet information and draws it on the display when the user is writing in the appropriate area chosen by the application. The tablet task maintains two buffers for tablet information, and when one buffer is full, the tablet task enables the save task, which will store that buffer in the document while the other buffer is being filled with new information. - The application task sees the handwritten annotation subsystem as one or more procedural calls, corresponding to the commands the application receives from the user or generates itself. It is assumed herein that the electronic document is stored in two separate parts, namely, the text portion and the handwritten annotation portion. This allows the application to work only with the text portion and the annotation subsystem to work only with the annotation portion of the document. The annotation portion has two parts: a directory, which has an entry for each annotation, and a data area, which disregards how and where the annotation is to be drawn upon the document display. - The following is a description of various commands that may be utilized in the operations of the application task and the annotation subsystem, showing the responses of the system to each of these commands: Initialize annotation subsystem: The application provides information to map the tablet coordinate space into the display coordinate

space, and the plane on which to draw the annotations. The interface sets up the two subsystem tasks, placing the tablet task in the selection mode, and reads the document annotation directory to create a list of annotations and their locations as read from the data area. - Display annotation symbols: The application indicates the portion of the document currently visible, thereby designating a display area valid for annotation. The interface checks the location of all annotations, one by one, and if the location of any annotation is within the valid area, the interface places an annotation symbol on the display at the location of that annotation.

:AB .IN 0 Create an annotation: The application indicates a display area valid for annotation. The interface places the tablet task in the annotation mode, creates a directory entry, and allocates space for the annotation in the document. The annotation is drawn on the display by the user as he writes on the tablet, and is saved as part of the document. :AB .IN 0 End an annotation: The application gives nothing to the interface. The interface returns the tablet task to the selection mode and stores all pertinent information about the document in the data area. - View an annotation: As the user chooses an annotation to view by selecting its symbol in the displayed document, the application gives the user-selected location to the interface. The interface checks this location against its list of valid annotation locations within the permissible display area; and if a match is found, the interface reads the information for that annotation and draws it on the display. - View all annotations: The application indicates a valid display area for annotations. The interface checks the locations of all annotations, and each time it finds a location within the valid area, it reads the information for the annotation located there and draws it on the display. - Blank an annotation: This command calls for a selected annotation to be blanked from the displayed document but not deleted from the stored document. The user selects the symbol of the annotation to be blanked. The application gives this location to the interface. The interface checks the location against its list of annotation locations, and if a match is found, it reads the information for that annotation and erases it from the display. - Blank all annotations: The application gives a valid display area to the interface. The interface checks all annotation locations, and each time it finds one within that area, it reads the information for that annotation and erases it from the display. - Delete an annotation: This command calls for a selected annotation to be both erased from the display and deleted from the document in storage. The user selects the symbol of the annotation to be deleted. The application gives this location to the interface, which checks it against the list of valid annotation locations. If a match is found, the interface reads the information for that annotation, erases the annotation from the display, deletes the annotation information from the data area, and deletes the directory entry. It also removes the annotation from its list and erases the annotation symbol, if necessary. - Delete all annotations: This calls for all annotations within the display area to be erased from the display and deleted from the document. The application gives a valid display area to the interface. The interface checks all annotation locations in its list, and each time it finds a location within the valid area, it reads the information for that annotation and erases it from the display. It then deletes the directory entries for all such annotations and clears them from the data area. It also removes these annotations from its list and erases the appropriate annotation symbols.

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L2: Entry 20 of 20

File: TDBD

Dec 1, 1982

DOCUMENT-IDENTIFIER: NA82123371

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TITLE: User Interface for Audio Communication System. December 1982.

Disclosure Text (1):

7p. This article describes a communication system using a telephone set which enables a user to compose, delete, move, and edit audio messages, audio memos, dictated letters and documents, and to distribute or receive the same from any other person or telephone set. The described system includes a special user interface, means for storing audio data in digital form, means for storing various commands for operation on the audio data, and a keyboard for commanding different functions upon the audio data and for entering strings of characters or commands associated with voice usage. Background to Problem. - Non-interactive communications provide a permanent record and have traditional distribution methods (e.g., U. S. Mail, public libraries), but these require very expensive, time consuming transcription (typing) and editing. Multiple copies are often required, and distribution is very slow. - Interactive communications have speed advantages (usually) , and allow voice intonation which carries much information. But interactive communication has become increasingly difficult. Studies show business people are unavailable over half the time, due to being on the telephone, out of their offices, and in meetings. Business people make 20 or so telephone calls each day, completing less than half of them to the party they want to talk with. They almost never leave a content message with a secretary, but rather a message to "call me back", and, of course, when the call-back is made, the same statistics apply. Thus, this call may not be completed. Because of frequent travel, both local and long distance, business people often do not know where the person is that they want to communicate with. Thus, locating people in time and space has become an increasingly improbable task. General Solution. - What is needed is a communication system that can be used directly by a person (without involving the cost and potential errors of a human intermediary specialist); that can be used from anywhere; that is sufficiently powerful to be useful by including the necessary broad range of communication needs; that communicates directly with people, not things (e.g., computer data bases) ; that handles soft information (opinions, attitudes, predictions, emotions) as well as hard information (facts, numbers, propositions) ; that handles information with a short life-time as well as a long life-time; that automatically updates itself; that is very easy to learn and easy to use; and that teaches people about itself. - Described herein are the best features of both non-interactive and interactive communication systems for speech filing. The system, called EASYCOMM, which is applicable to speech filing systems generally, allows a person to compose (edit, review, insert, delete, annotate, structure) a message, memo, document; to distribute this to any person in the world; and to receive a message, memo, or document from any person in the world. To do all this, EASYCOMM uses a push button telephone (or its equivalent) as the terminal. The user gives commands to EASYCOMM via the push button telephone keys. Documents are stored and modified in digital form, but can be received or played out in analog form or digital form. - A user interface, i.e., the language and feedback that the user and EASYCOMM use, was required to allow people to learn easily and remember how to use 12. keys to do any of the 100-200 different possible functions required (defined below). The user-interface issue was twofold: what are the useful functions needed in a communication system and, once identified, how should they map into the 12 keys of a push button telephone to be easily learned and remembered. Document Creation or Editing. - This article now describes what a person can do with EASYCOMM. A person, using only a push button telephone as a terminal, can create a message, memo, letter, or document; review and replace all or part of it; and insert, delete, move, and edit segments of it. (Hereafter messages, letters, memos, documents, etc., will be collectively referred to as "documents".) A person can annotate audio, written, printed, or graphic documents received from other people. While the present article emphasizes spoken documents, we have used EASYCOMM to compose and distribute handwritten and typed documents as well. Thus, this article covers other media, also. Unlike a tape-recorder or conventional dictating system, EASYCOMM is voice-activated. A person does not turn

it off and on while recording. In effect, EASYCOMM records only when a person is talking. For subsequent ease of listening, as well, as storage compaction, pauses in between words are automatically deleted by EASYCOMM. Document Distribution. - A person can send a document to any person in the world that knows how to use a telephone. A person can send a document to one person, to several people at once, or to people on distribution lists (either made up by that person or provided by EASYCOMM). A person can page other people or radio other people. Documents can be sent by dialing either the name of the person or the person's telephone number. Of importance, a recipient can receive a message at any telephone number in the world. The sender need not know where a registered recipient is or will be. In the case of ambiguities with names (e.g., several Smiths) EASYCOMM asks the user which Smith. - When a message is sent, EASYCOMM calls the recipient and notifies him or her about this. This call may be made at a time designated by EASYCOMM, or it may be made at times designated either by the sender or recipient. EASYCOMM will automatically re-try, should a recipient be unavailable. A person can make his or her own phone ring at anytime. Thus, one may send himself wake-up calls or personal reminders. - A person may send a request to a distribution list of people, and as they respond, EASYCOMM recognizes this and deletes their names from the list. EASYCOMM will make additional reminder calls to the remaining people, reminding them of overdue replies. - The concept of distribution lists is further enhanced by EASYCOMM, which stores organizational charts and automatically updates standard distribution lists. - A person can ask EASYCOMM if a particular individual has listened to a message that he or she sent that individual. While a person can verify through the U. S. Post Office's Registered Mail system whether someone at the recipient's (presumed) location has accepted a document, this, unlike EASYCOMM, does not tell whether the intended recipient has actually read (listened to) that document. Secondly, EASYCOMM provides this information immediately, whereas U. S. Registered Mail, for example, requires several days. - A person can send a document to a recipient and ask EASYCOMM to automatically notify him or her once the recipient has listened to it. - A person can cancel a document that he has already sent. If the document is sent to several people, and if one or more people have listened to it, EASYCOMM can be told whether to cancel the document for those other people. - A person can amend an already sent document. Again, EASYCOMM has the ability to either allow this or not depending upon whether the original document was already heard by one or more people. - A person can solicit a reply to his document, and both the sender and recipient can be automatically notified the day this reply is due, as well as if it is overdue. Document Filing and Retrieval. - A permanent record is made of each audio document, together with relevant useful statistics (e.g., time and date of creation, author's name, list of recipients, when each has heard it, actions they have taken on it). These statistics automatically provide a chronological file that a person can easily search. The document itself can be erased by the recipient. EASYCOMM also erases documents that have been saved past a certain time. This time is set by a "customer" (i.e., the owner of the entire system). Retention dates can be specified by the sender also. EASYCOMM provides an audit trail that may be retained indefinitely. - A recipient can classify or file a document under any heading he or she chooses. The recipient can give the document a coded name as well as a spoken name. - A person can retrieve a document by sender's name, by recipient's name, by file name, by date of origin, by classification (e.g., personal confidential, secret). Message Control. - A person has great control over the document he or she sends. A person can classify a document (e.g., confidential, secret, personal). A person can regulate what others may do with the document (e.g., listen only, listen and comment on it, listen, comment, and forward it, etc.). A person can control the retention period of his document. A person can cancel or amend an already sent document. A person can request responses to his document. Personalization. - A person can tailor EASYCOMM to his or her own needs. A person can set the amount of feedback from EASYCOMM, perhaps based upon how experienced he or she is in using EASYCOMM. A person can assign functions to special passwords. For example, a person may want his own spouse or family to have access only to the documents specifically for them (e.g., "I'll be home late tonight."). A person may want to allow his or her secretary to have access to all

non-confidential documents. These are accomplished through a Family Password and Secretary Password, respectively. While EASYCOMM provides each user with standard defaults for these passwords, the user can change them. - There are several user interface languages, and the user can select which one he or she uses. A new user, for example, may choose to use a system-driven, prompted language that experience has shown requires no user training. The experienced user, on the other hand, may choose a generative language. In addition, EASYCOMM has a facility that automatically monitors user behavior, and provides the feedback and language appropriate to the user's knowledge. Furthermore, self help tools on EASYCOMM are simply called by the user. - All of these functions are accomplished by a person pressing keys on, and recurring feedback from, a standard push button telephone. Experience has shown that this person requires only a little bit of training to do work of this function. - EASYCOMM's features are now described. EASYCOMM can be used from anywhere. Unlike present telephone recording systems, a person can compose a document from any telephone and send it to other people without knowing their whereabouts or telephone numbers. Unlike present interactive computer systems that use typewriter or CRT display terminals, a person need not seek out a special purpose terminal, but can use the ubiquitous telephone. - EASYCOMM presents to the user stored voice prompts, hints, suggestions, and menu choices for accomplishing useful work. - EASYCOMM presents to the user stored voice confirming messages following appropriate key presses, stored voice error messages, warnings, or helpful hints following inappropriate or potentially inappropriate key presses.

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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
HANDWRIT\$3	0
HANDWRIT	1
HANDWRITE	238
HANDWRITEN	8
HANDWRITER	16
HANDWRITERS	2
HANDWRITES	75
HANDWRITING	10494
HANDWRITLEN	1
HANDWRITTE	1
HANDWRITTED	2
(HANDWRIT\$3 SAME ANNOTAT\$3 SAME SAV\$3).PGPB,USPT,EPAB,JPAB,DWPI,TDBD.	20

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